

THE PHILIPPINE MOLLUSKS OF THE GENUS PLANORBIS.

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Up to date only two species of *Planorbis* have been known from the Philippines. To these Maj. E. A. Mearns's explorations in Mindanao have added two new forms, which are described and figured in the present paper.

PLANORBIS (GYRAULUS) QUADRASI Möllendorff.

Planorbis (Gyraulus) quadrasi MÖLLENDORFF, Bericht. Senek. Nat. Ges., 1903, p. 115, pl. III, figs. 11, 11a-11c.

The type locality for this species is Montalban, Luzon. The type is said to have three whorls and measures: Greater diameter, 3.5 mm.; altitude, 1 mm. Von Möllendorff also reports it in the same publication from the island of Leyte. His figure shows almost four instead of three whorls as cited in the description.

PLANORBIS (GYRAULUS) MINDANENSIS, new species.

Shell lenticular, biconcave, thin, semitransparent, corneous. Upper surface decidedly more concave than the lower, showing all the whorls, which increase evenly and rapidly in size. The entire upper surface



FIG. 1.—PLANORBIS (GYRAULUS) MINDANENSIS.

is marked by numerous, quite prominent, irregularly developed lines of growth. Periphery of the last whorl marked by a slender keel. The basal parts of the whorls are a little more convex than the upper sides, with the incremental lines less strongly developed. The center

of the base is only slightly depressed below the plane of the last whorl; in fact the most convex part of all of the whorls on the base falls almost in an even plane. The turns are separated above and below by well-impressed sutures. Aperture quite large, suboval, decidedly oblique, angulated at the middle of the outer lip by the slender keel. Columella practically absent; parietal wall covered with a thin callus.

The type has four and one-fourth whorls and measures: Greater diameter, 6.7 mm.; lesser diameter, 5.7 mm.; altitude, 1.7 mm.

The type and 196 specimens, Cat. No. 192982, U.S.N.M., were collected in Lake Buluan, Rio Grande Valley, province of Cotabato, Mindanao.

PLANORBIS (HELICORBIS) LUZONICUS Möllendorff.

Planorbis (Hippeutis) luzonicus MÖLLENDORFF, Nachr. Mal. Ges., XXVII, 1895, p. 120.

The shells described were collected by natives near the village Libmanan, in the province Camarines, Luzon. The measurements given for the type, which has five whorls, are: Greater diameter, 10.5 mm.; lesser diameter, 9 mm.; altitude, 3 mm.

PLANORBIS (HELICORBIS) MEARNSI, new species.

Shell lenticular, vitreous, horn color. Whorls increasing regularly in size, the last enveloping the greater part of the previous turns. All of the whorls show evenly coiled on the dorsal surface in the



FIG. 2.—PLANORBIS (HELICORBIS) MEARNSI.

extremely regularly conically depressed apex. The last half turn only, deviates from the regular spiral in having the summit gradually deflected until it falls about halfway between the summit and periphery on the preceding turn, at the aperture. The angle at the junction of the outer wall and the parietal wall is filled up for a short distance, and this shows through the shell as a moderately broad solid band, and makes the whorls appear as if they had a double suture. The whorls are evenly rounded on the dorsal surface and marked by moderately strong incremental lines only. Sutures lightly impressed. Periphery of the last whorl bluntly but strongly angulated. Base almost flat, with a moderately broad umbilicus, in which the whorls can be seen regularly and evenly coiled, but here also the last half of the last one becomes more and more openly coiled until it reaches

a point at the aperture, about one-third of the distance toward the periphery from the umbilicus to the periphery. The base, like the upper surface, is marked by numerous incremental lines. Aperture decidedly oblique, arrow shaped, the apex falling at the periphery, and the two barbs above and below the periphery of the preceding turn. Outer lip thin, somewhat sinuous; basal lip almost straight; columella exceedingly short, represented by the mere upward turn of the basal lip; parietal wall covered by a thin callus.

The type has almost five whorls and measures: Altitude, 1.5 mm.; greater diameter, 5 mm.; lesser diameter, 4.4 mm. The type and seven specimens, Cat. No. 192981, U.S.N.M., were collected by Maj. E. A. Mearns in Lake Buluan, Rio Grande Valley, Mindanao.

The only other *Helicorbis* reported from the islands is *P. (H.) luzonicus* Möllendorff. The much larger size—altitude, 3 mm.; greater diameter, 10.5 mm.; lesser diameter, 9 mm.—is sufficient to distinguish it from the present species.